

EXHIBIT #4



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

11/462,152

08/03/2006

Adrian Burian

042933/313925

4832

826

7590

09/14/2010

ALSTON & BIRD LLP

BANK OF AMERICA PLAZA

101 SOUTH TRYON STREET, SUITE 4000

CHARLOTTE, NC 28280-4000

EXAMINER

VO, TUYEN KIM

ART UNIT

PAPER NUMBER

2887

MAIL DATE

DELIVERY MODE

09/14/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 11/462,152	Applicant(s) BURIAN ET AL.	
	Examiner Tuyen Kim Vo	Art Unit 2887	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Application/Control Number: 11/462,152
Art Unit: 2887

Page 2

DETAILED ACTION

Acknowledgment

1. This Office action is responsive to amendment filed on 06/24/2010.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 8-11, 13-18, 20-23, 25-30, 33-37, 40 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhu et al. (US 2005/0103858).

Re claims 1, 13, 25 and 41, Zhu teaches a method, a computer program product and an apparatus comprising at least one computer-readable storage medium having computer-readable program code portion stored therein, the computer-readable program code portion comprising (fig. 4I1-4I3, 26A and 26B): first executable portion for processing an input image (captured image data frame) for an attempt to decode the input image using a current barcode reading method (fig. 2A2), the processing including performing a correction of the input image (figs. 17A-19B); a second executable portion for determining whether the processing of the input image is successful ([345], [353], [504], [510] and [513]) based on a determination as to whether the correction is completed; a third executable portion for switching to one of a different barcode reading method ([0058], [0060], [0061], [0066], [0067], [0489] and [0490]) or processing a new frame of the input image using the current barcode reading method in response to the

Application/Control Number: 11/462,152

Page 3

Art Unit: 2887

processing of the input image being unsuccessful; a fourth executable portion for attempting a decode of the input image using the current barcode reading method in response to the processing of the input image being successful ([0465], [0513], [0516], [0519], [0540] and [0547]); a fifth executable portion for performing a switch to a different barcode reading method in response to a failure of the attempt to decode the input image using the current barcode reading method ([0058], [0060] [0061], [0063], [0066], [0067], [0484], [0489], [0490] and [0493]).

Re claims 2, 14 and 26, Zhu further teaches the first executable portion includes instruction for determining a region of interest (ROI) defining an area in which a barcode is expected (see fig. 17A, [0060], [0063], [0066]-[0067] and [0392]-[0395]).

Re claims 3, 15 and 27, Zhu further teaches the first executable portion includes instructions for performing the correction by correcting the ROI (see fig. 18E and [0181], [0419], [0428]).

Re claims 4, 16 and 28, Zhu further teaches the first executable portion includes instructions for correcting corner positions of the ROI based on a degree of overlap between barcode and segment of a border of the ROI which are adjacent to each respective corner (see figs. 18D-18G; [0183], [0194], [0315], [0392], [0418], [0420], [0432], [0456] and [0478]).

Re claims 5, 17 and 29, Zhu further teaches the first executable portion includes instructions for performing the correction by performing re-sampling and geometric image correction (see fig. 18E; [0419]-[0428] and [0452]).

Application/Control Number: 11/462,152
Art Unit: 2887

Page 4

Re claims 6, 11, 18, 23, 30 and 37, Zhu teaches hand-supportable digital image-based bar code symbol reader that is processing image digitally which includes a binarization element that binarizing the ROI or the input image (see [0173], [0224], [0247] [0289], [0377] and [0380]).

Re claims 8, 20 and 33, Zhu further teaches a sixth executable portion for performing a determination as to whether the input image includes one of a one dimensional (1D) barcode or a two dimensional (2D) barcode (see [0003], [0045], [0048]).

Re claims 9, 21 and 34, Zhu further teaches comprising a seventh executable portion for determining a type of barcode (see fig. 14).

Re claims 10, 22 and 36, Zhu further teaches wherein the sixth executable portion includes instructions for performing the determination based on a relationship between a first length of an object oriented in a first direction (such as X-coordinate) and second length of the object oriented in a second direction (Y-coordinate) that is substantially perpendicular to the first direction (see [0398]-[0418]).

Re claim 35, Zhu further teaches the classification is configured to determine the type of barcode based on a comparison of geometric patterns within the barcode to a known specification (see fig. 14 and [0058]-[0066]).

Re claim 40, Zhu further teaches the apparatus is embodied as a mobile terminal (see figs. 1A and 31).

Application/Control Number: 11/462,152
Art Unit: 2887

Page 5

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 7, 12, 19, 24, 31, 32, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu in view of Umeda (US 2006/0280363).

Application/Control Number: 11/462,152
Art Unit: 2887

Page 6

Re claims 7, 12, 19, 24, 31 and 38, Zhu teaches hand-supportable digital image-based bar code symbol reader that processing image digitally (global binarization, [02446]-[0248]) and automatically switching to one of a different barcode reading functions in response to input image being unsuccessful.

However, Zhu fails to teach switching to adaptive binarization.

Umeda teaches image processing apparatus using adaptive binarization (see [0223] and [0224]).

In view of Umeda's teachings, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system and method of Zhu by employing adaptive binarization function as taught by Umeda so that the image can be decoded successfully and such modification would provide better reading/decoding.

Re claims 32 and 39, both Zhu and Umeda teach all subject matter claimed as applied above. Umeda further teaches wherein adaptive binarization comprises dividing the input image into regions and separately binarizing the regions of the input image based on a relationship between a moving sum of region values compared to an adaptive threshold (see figs. 25, 28A, 28B, [0079], [0083], [0200], [0201], [0209] and [0023]-[0224]).

Response to Arguments

8. Applicant's arguments filed 06/24/2010 have been fully considered but they are not persuasive.

Application/Control Number: 11/462,152
Art Unit: 2887

Page 7

Applicant traversed to the rejection by mainly arguing that the Zhu reference fails to teach “the processing includes performing a correction on the input image and that determining whether the processing of the input image is successful is based on a determination as to whether the correction is completed.” Examiner is respectfully not agreed.

In paragraphs [0175], [0183], [0188], [0194] and figure 17A of Zhu discloses the processing of image involve searching for regions of interest, partitioning image and marking the four corners of ROI, etc. Although Zhu does not explicitly teach the exact term of “correct on the input image”, however by performing such processing steps would inherently includes correcting of the image for analyzing before decoding the image.

With regarding to claims 4, 16 and 28, same rationale as applied above.

Based on the above rationale, it is believed that the rejection to claims 1-41 are proper and therefor, the rejections are still maintained.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part

Application/Control Number: 11/462,152

Page 8

Art Unit: 2887

of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen Kim Vo whose telephone number is (571)270-1657. The examiner can normally be reached on Monday - Friday, 7:30a.m. - 5:00p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven S. Paik can be reached on (571) 272-2404. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 11/462,152
Art Unit: 2887

Page 9

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. K. V./
Examiner, Art Unit 2887

/Thien M. Le/
Primary Examiner, Art Unit 2887